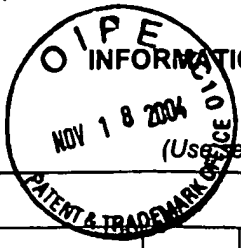


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 <p><b>INFORMATION DISCLOSURE CITATION</b> (Use several sheets if necessary)</p>				APPLICANT Alan J. HEEGER et al.			
				FILING DATE 3/25/2004		GROUP ART UNIT 1634	
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EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
/RTC/		5,139,812	8/8/1992	Lebacq, Philippe	427	7	
<b>FOREIGN PATENT DOCUMENTS</b>							
	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
	B1	<del>GN1422900</del>	<del>8/11/03</del>	<del>China [English Abstract]</del>			<del>X</del>
	B2	<del>GN1422061</del>	<del>6/11/2003</del>	<del>China [English Abstract]</del>			<del>X</del>
	B3	<del>WO/01/035020</del>	<del>4/20/2004</del>	<del>Japan</del>			<del>X</del>
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
	C1	<del>Kuhr, et al. "Electrochemical DNA analysis comes of age" <i>Nature Biotech</i> 18:1042-1043 (2000)</del>					
	C2	<del>Willner, Itamar "Biomaterials for Sensors, Fuel Cells, and Circuitry" <i>Science</i> 296:2407-2408 (2002)</del>					
	C3	<del>Fritz, et al. "Electronic detection of DNA by its intrinsic molecular charge" <i>Proc. Natl. Acad. Sci., USA</i> 99(22):14142-14146 (2002)</del>					
	C4	<del>Brazill, et al. "Capillary Gel Electrophoresis with Sinusoidal Voltammetric Detection: A Strategy To Allow Four-Color DNA Sequencing" <i>Anal. Chem.</i> 73:4882-4890 (2001)</del>					
	C5	<del>Palecek, et al. "Electrochemistry of Nucleic Acids and Development of DNA Sensors" <i>Crit. Rev. Anal. Chem.</i> 32(3):261-270 (2002)</del>					
	C6	<del>Millan et al. "Sequence-Selective Biosensor for DNA Based on Electroactive Hybridization Indicators" <i>Anal. Chem.</i> 65:2317-2323 (1993)</del>					
	C7	<del>Kelley, et al. "Single-base mismatch detection based on charge transduction through DNA" <i>Nucleic Acids Res.</i> 27(24):4890-4897 (1999)</del>					
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<b>OTHER DOCUMENTS</b> (Including Author, Title, Date, Pertinent Pages, Etc.)							
	C8	Ihara et al "Ferrocene-oligonucleotide conjugates for electrochemical probing of DNA" <i>Nucleic Acids Res</i> 24(21):4273-4280 (1996)					
	C9	Yu, et al. "Electronic Detection of Single-Base Mismatches in DNA with Ferrocene-Modified Probes" <i>J. Am. Chem. Soc.</i> 123:11155-11161 (2001)					
	C10	Umek et al. "Electronic Detection of Nucleic Acids" <i>J. Mol. Diag.</i> 3(2):74-84 (2001)					
	C11	Park et al. "Array-Based Electrical Detection of DNA with Nanoparticle Probes" <i>Science</i> 295:1503-1506 (2002)					
	C12	Korri-Yousoufi, et al. "Toward Bioelectronics: Specific DNA Recognition Based on an Oligonucleotide-Functionalized Polypyrrole" <i>J. Am. Chem. Soc.</i> 119:7388-7389 (1997)					
	C13	Clelland et al. "Hiding messages in DNA microdots" <i>Nature</i> 399:533-534 (1999)					
	C14	Cox et al. "Bar coding objects with DNA" <i>Analyst</i> 126:545-547 (2001)					
	C15	Fan et al. "Spectroscopy and Electrochemistry of the Covalent Pyridine-Cytochrome c Complex and a Pyridine-Induced, "Alkaline-like" Conformation" <i>J. Phys. Chem. I(B)</i> 106:11375-11383 (2002)					
	C16	Hirst, J. et al. "Kinetics and Mechanism of Redox-Coupled, Long-Range Proton Transfer in an Iron-Sulfur Protein. Investigation by Fast-Scan Protein-Film Voltammetry" <i>J. Am. Chem. Soc.</i> 120:7085-7094 (1998)					
	C17	Tyagi et al. "Molecular Beacons: Probes that Fluoresce upon Hybridization" <i>Nat. Biotechnol.</i> 14:303-308 (1996)					
	C18	Boon et al. "An electrical probe of protein-DNA interactions on DNA-modified surfaces" <i>Nat. Biotechnol.</i> 20:282-286 (2002)					
	C19	O'Sullivan, et al. "Aptasensors – the future of biosensing?" <i>Anal. Bioanal. Chem.</i> 372:44-48 (2002)					
	C20	Robertson et al. "In vitro selection of an allosteric ribozyme that transduces analytes to amplicons" <i>Nature Biotech</i> 17:62-66 (1999)					
	C21	Stojanovic et al. "Fluorescent Sensors Based on Aptamer Self-Assembly" <i>J. Am. Chem. Soc.</i> 122:11547-11548 (2000)					
	C22	Cook et al. "Methylated DNA labels for marking objects: <i>Biotechnol. Lett</i> 25:89-94 (2003)					
	C23	Immoos et al. "Characterization of Immobilized DNA Hairpins Containing Tethered Redox Probes" <i>Dept. of Chemistry, Duke University, P.M. Gross Laboratory, Durham, NC</i>					
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Application Number	10810333
Filing Date	2004-03-25
First Named Inventor	HEEGER, ALAN J
Art Unit	1634
Examiner Name	CROW, ROBERT THOMAS
Attorney Docket Number	UCSB-510CIP

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/RTC/	1	4840893		1989-06-20	HILL, et al.	
	2	5512726		1994-05-17	LIZARDI, et al.	
/RTC/	3	5942388		1999-08-24	WILLNER, et al.	
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/RTC/	2	20040191801	A1	2004-09-30	HEEGER, et al.	
	3	20040219523	A1	2004-11-04	STANTON, et al.	
	4	20050233358	A1	2005-10-20	THORP, et al.	
	5	20070020641	A1	2007-01-25	HEEGER, et al.	
/RTC/	6	20070154909	A1	2007-07-05	XIAO, et al.	

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	4	MACAYA et al. Structural and functional characterization of potent antithrombotic oligonucleotides possessing both quadruplex and duplex motifs. Biochemistry 34:4478-4492	<input type="checkbox"/>
	5	PADMANABHAN, et al. An Ambiguous of A DNA 15-mer Thrombin Complex. Acta Crystallogr. D52:272-282 (1996)	<input type="checkbox"/>
	6	POTYRAILO et al. Adapting Selected Nucleic Acid Ligands (Aptamers) to Biosensors. Anal Chem 70:3419-3425 (1998)	<input type="checkbox"/>
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